

# PETROLOGY OF SCOTTISH STONE IMPLEMENTS

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THIS survey of implement petrology, with particular reference to south-west Scotland and the collections in local museums in that area, was commenced in 1954 and has progressed steadily since then. As I left Scotland in September 1960, it seems an opportune moment to publish an interim report which, I hope, will encourage other people to continue the work after my departure.

This work could not have been undertaken at all without the active help of many people, to whom I am much indebted: Professor W. F. Grimes and Dr H. N. Savory have given me much encouragement and I have enjoyed the privilege of discussing the subject with Professor F. W. Shotton and Dr F. S. Wallis. I have also received much assistance in the study of the axes of Group IX from Mr E. M. Jope. The work was largely carried out by the Department of Geology of Glasgow University, through the kindness of Professor T. N. George, and I am indebted to my colleagues on the staff of that Department, Dr B. C. King and Dr N. Holgate, for expert petrological identifications. My greatest debt of all is to the authorities of the Museums, who allowed us to examine and section the axes in their collections.

## GENERAL CONSIDERATIONS

The basic principle underlying the petrological examination of stone implements is well known and needs only the briefest re-statement here. In a classic paper,<sup>1</sup> Keiller, Piggott and Wallis showed that a large number of stone implements found in south-western England can be geologically attributed to natural rock-outcrops which, in many cases, are located far distant from the find-spots of the implements concerned. The discoveries of definite quarry sites at Tievebulliagh,<sup>2</sup> Graig Lwyd<sup>3</sup> and Great Langdale,<sup>4</sup> coupled with a more extensive application of petrological examination to implements, has served to underline the industrial nature of the production of these implements and the far-flung trade which apparently carried these axes throughout the British Isles.

When we commenced work on the Scottish axes, it rapidly became evident that the problems posed by the study were rather more complex, for unlike more southerly areas of Britain, which were apparently ice-free since Old Drift times, Scotland is largely blanketed with glacial drift-material, which contains large numbers of glacial erratics. It is evident, then, that in sediment-covered areas, such as southern England, any axes made of igneous rock are most likely to be imports, but in Scotland

<sup>1</sup> Keiller, A., Piggott, S. and Wallis, F. S., 'First Report . . . on the Petrological Identification of Stone Axes', *P.P.S.*, vii, 50-72.

<sup>2</sup> Knowles, W. J., 'Stone Axe Factories near Cushendall, Co. Antrim', *J.R.A.I.*, xxxiii, 360-6.

<sup>3</sup> Warren, S. H., 'A Stone Axe Factory at Craig Lwyd, Penmaenmawr', *J.R.A.I.*, xlix, 342-65.

<sup>4</sup> Bunch, B. and Fell, C. I., 'A Stone Axe Factory at Pike of Stickle, Great Langdale, Westmorland', *P.P.S.*, xv, 1-20.

the position is confused by these glacial erratics, which are all too often boulders of hard, fine-grained stone, such as would be strongly favoured for manufacturing stone axes.

My geological colleagues also tell me that outcrops of igneous rocks suitable for manufacturing implements are so widespread and are relatively so little studied in Scotland, that it is impossible to make any certain attributions of many implements. In the circumstances, therefore, we have had in many cases to content ourselves with describing the section of an axe, without making any attempt to attribute it to a definite place of origin.

#### WORKING SITES

Only two working sites have been reported from Scotland, so far as we know: flakes of material identified as Tievebulliagh Porcellanite<sup>1</sup> were found by Mr A. D. Lacaille at Luss, Dunbartonshire, and there exists a brief report of a working site found at Creag na Caillich, Killin, Perthshire, which yielded chips and rough-outs of a green banded hornfels.<sup>2</sup> It is not clear if a local outcrop was being quarried at this place, nor is the extent of the site known; none of the axes so far sectioned in Scotland can be identified as being made of this material, so the existence of a factory – in the strict sense of the word (i.e. a site from which rough-outs or axes were exported) – is not beyond dispute.

#### GROUPINGS OF SCOTTISH AXES

All the implements which have been sectioned in the course of this survey have been axes of the so-called Neolithic type, i.e. they are unperforated and either are rough-outs flaked to shape or are partly or wholly ground. Some of the axes show close similarities with established groups known from England and Ireland and, where this has been the case, the implements have been included in this group without, however, our being able to commit ourselves to a categorical statement about their place of origin.

#### GROUP VI (fig. 1)

This group has been extensively studied of late<sup>3</sup> and its origins are attributed to the known group of factory sites in Great Langdale, Westmorland. A majority of the axes found in south-west Scotland seems to be attributable to this group. The possibility that some of these implements may have been made locally from glacial erratics has recently been emphasised by Mr L. Alcock,<sup>4</sup> but the extent to which this may have happened in Scotland is debatable, for although the known direction of glacial drift could have taken erratics of Borrowdale origin to Yorkshire, it is unlikely (on present evidence) to have brought them to Scotland. It is also doubtful

<sup>1</sup> Stone, J. F. S. and Wallis, F. S., 'Second Report . . . on the Petrological Examination of Stone Axes', *P.P.S.*, XIII, 47-55. See also: Lacaille, A. D., 'Aspects of Intentional Fracture', *T. Glasgow A.S.*, N.S., IX, 313-41.

<sup>2</sup> *Discovery and Excavation, Scotland, 1955* (Scottish Regional Group, C.B.A.), 35.

<sup>3</sup> Bunch, B. and Fell, C. I., *op. cit.*; also Piggott, S., *Neolithic Cultures of the British Isles* (C.U.P., 1954), 293-5.

<sup>4</sup> Alcock, L., 'Polished Stone Axes of Lake District Origin from Leeds', *Yorks. A.J.*, CLV and CLVI, 391-4.

if the typology of the implements is a safe guide, for it is known that rough-outs were exported far and wide and presumably the form of the final implement, though it would be partly dictated by the form of the rough-out, was partly left to local taste or tradition. Mr Jope's suggestion along these lines,<sup>1</sup> however, does not satisfactorily account for the remarkable uniformity which some of these implements display –

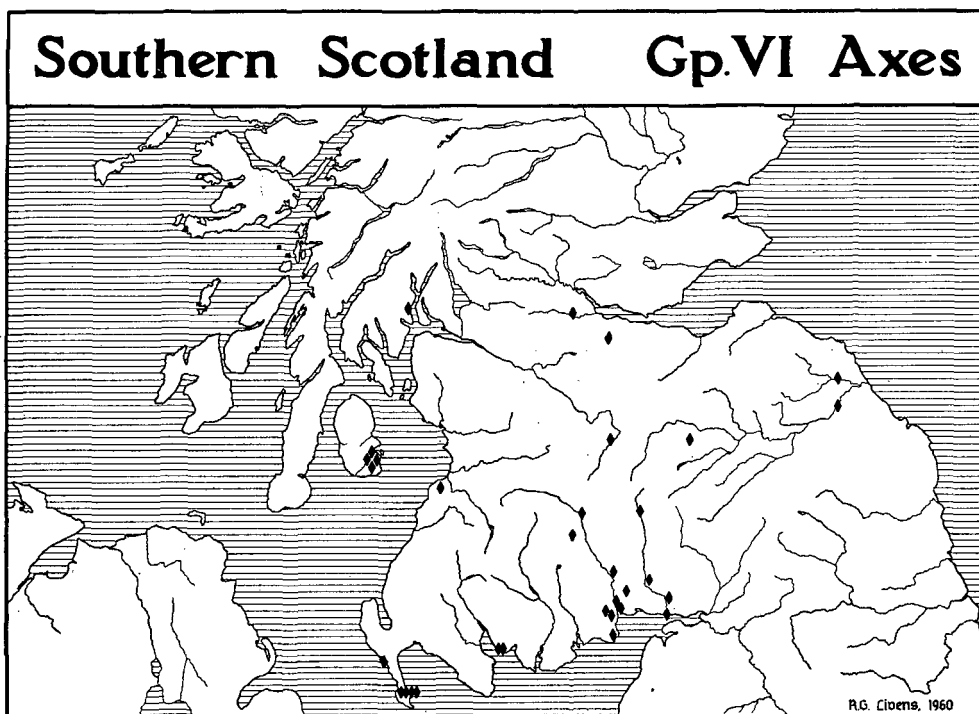


FIG. 1

the flattening of the sides and the typical 'Cumberland Axes' with their great length and fish-tail butts – over an extensive area. Although these forms are not known from other factory sites, flint axes with flattened sides and thin butts are common in Holland<sup>2</sup> and are also known from southern England.<sup>3</sup> It is evident, therefore, that the problem of the form of the factory products is extremely complicated.

Professor Piggott has examined the distribution of Group VI axes in Scotland<sup>4</sup> and has plotted the distribution of implements which appear on macroscopic evidence to belong to this group. Our examination has served to underline his comments. The principal concentrations are in the valleys of the Nith, Annan and Clyde, with a coastal scatter in Galloway and a local concentration in Arran. The four Arran

<sup>1</sup> Jope, E. M. and Preston, J., 'An Axe of Stone from Great Langdale, Lake District, Found in County Antrim', *Ulster J.A.*, xvi, 31-36.

<sup>2</sup> This observation is based on an examination of the Prehistoric Collections of the Rijksmuseum van Oudheden, Leiden, by kind permission of the Director.

<sup>3</sup> Jope, E. M. and Preston, J., *op. cit.*

<sup>4</sup> Piggott, S., *op. cit.*

examples are of some interest, for they are reported to come from the Clyde-Carlingford cairn at Giants Graves, Whiting Bay (BUT 1 to 4 (H.M.)) and, if this group was in fact found in association, it would consist of four axes of Group VI, one possibly of Group IX and one related to an axe which was found at Kilmartin (ARG 1 (H.M.)). Such inquiries as have been made have shown that the association of these axes with each other or with the tomb-site cannot be definitely established.

A point worthy of note is that none of the Group VI implements so far examined come from the North Ayrshire – Renfrewshire – Dunbartonshire area and that this area is the one from which the only implements of Group IX have come. This distribution-pattern may well be modified when more implements have been sectioned. The occurrence of Group VI implements in the Tweed valley has its interest, in view of the Dutch affinities of some types of Group VI axes, which we have already noted.

The distribution pattern-presented by Group VI implements is not unambiguous: if these implements were in fact imports from the Lake District, it is only to be expected that they should occur commonly on the Galloway coast; it is possible, too, that the finds in the valleys of the Annan and Nith may mark trade-routes, whereby axes brought across the Solway by sea reached Tweeddale and eastern Scotland. On the other hand, the distribution of these implements in coastal areas reflects the pattern of known settlement-sites and chambered tombs and the spread up the valleys may likewise reflect a diffusion of settlement up these valleys into the hinterland, of which all other traces have been obliterated.

#### *Types of Group VI Implements Represented*

##### 1. Rough-Outs (fig. 2):

One rough-out has been sectioned.

DUM 2 (H.M.), from Annan, Dumfriesshire. Length 5·7 in., breadth 2·1 in., of a pale yellow-grey stone. Section: Typical Group VI.

##### 2. Ground Stone Axes with Faceted Sides (fig. 2):

Ten of the implements sectioned are of this type, which is probably the most distinctive form of Group VI implements. They range in size from true 'Cumberland Axes' over 12 in. long down to small implements some 4 in. long.

BER 2 (H.M.), from Cornhill-on-Tweed, Berwickshire. Length 4·5 in., breadth 2·5 in., of a fine-grained, light, creamy-grey stone. Section: Typical Group VI.

BUT 2 (H.M.), from Giants Graves, Whiting Bay, Isle of Arran. Length 5·7 in., breadth 2·2 in., of a fine-grained, pale yellow-grey stone. Section: Typical Group VI.

BUT 3 (H.M.), from Giants Graves, Whiting Bay, Isle of Arran. Length 4·2 in., breadth 2·1 in., of a fine-grained, dark grey stone. Section: Typical Group VI.

BUT 4 (H.M.), from Giants Graves, Whiting Bay, Isle of Arran. Length 4·1 in., breadth 2·4 in., of a fine-grained, dark grey stone. Section: Typical Group VI.

DUM 3 (H.M.), from Maidenbower Crags, Dumfries. Length 8·1 in., breadth 2·8 in., of a fine-grained, 'battleship grey' stone. Section: Typical Group VI.

DUM 5 (H.M.), from Kelton Mains, Dumfries. Length 6.5 in., breadth 2.3 in., of a fine-grained, whitish-grey stone, showing clear grinding marks. Section: Typical Group VI, with narrow bandings.

DUM 6 (H.M.), from Durrisdeer, Dumfriesshire. Length 4.4 in., breadth 2.0 in., of a fine-grained, medium-grey stone. Section: Slightly Banded Group VI.

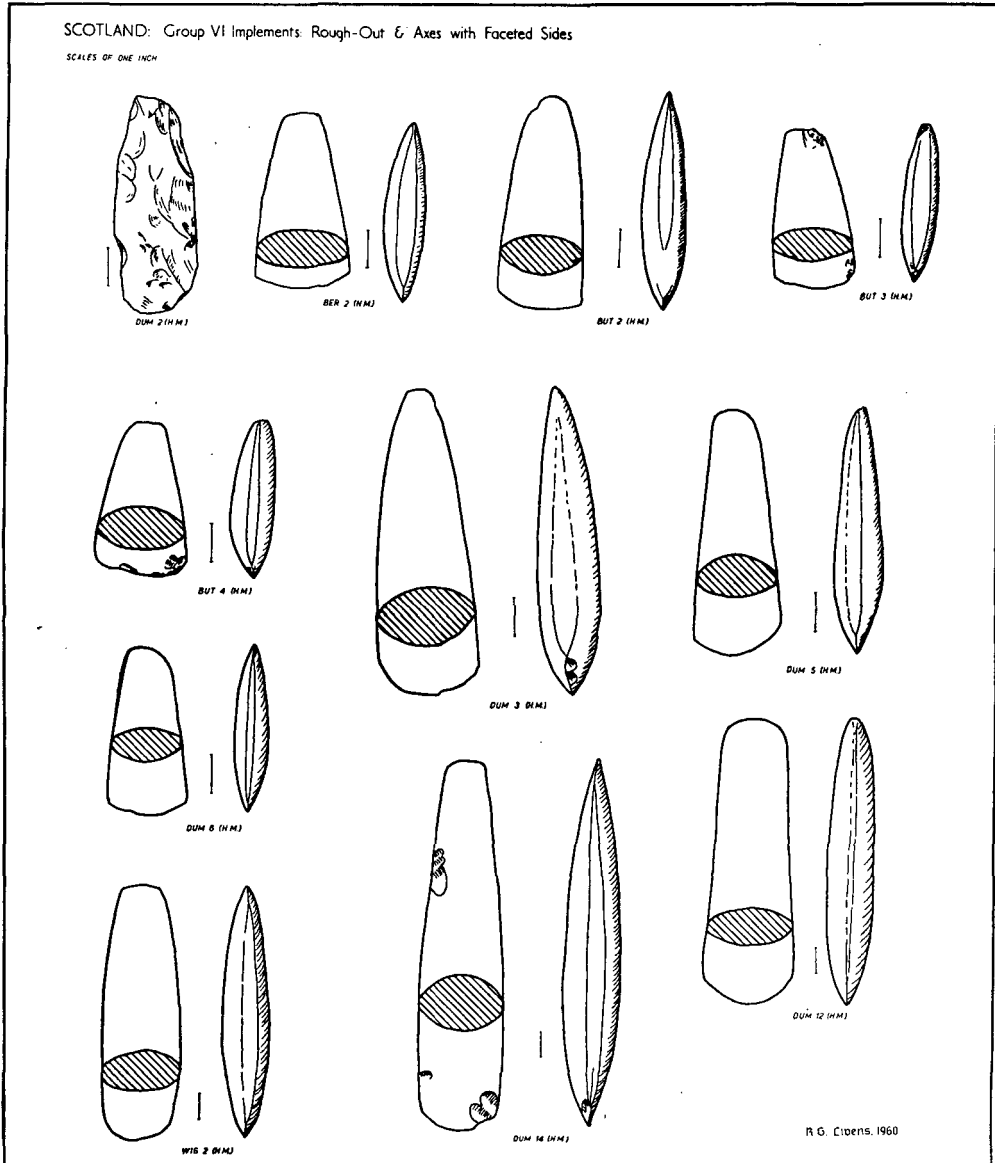


FIG. 2

DUM 12 (H.M.), from Closeburn, Dumfriesshire. Length 11·2 in., breadth 3·6 in., of a fine-grained, medium-grey stone, with areas of dark brown discoloration. The cutting edge is slightly expanded. Section: Typical Group VI.

DUM 14 (H.M.), from East Tinwald, Dumfriesshire. Length 14·5 in., breadth 3·2 in., a typical 'Cumberland Axe' of medium-grey stone. Section: Typical Group VI.

WIG 2 (H.M.), from Kirklauchline, Stoneykirk, Wigtownshire. Length 9·9 in., breadth 3·0 in., of a fine-grained, medium-grey stone. Section: Typical Group VI.

### 3. Thin-Butted Ground Stone Axes, without Faceted Sides (fig. 3):

These axes vary greatly in size and type and little uniformity can be expected; many of these axes may be the result of prolonged local re-use or re-sharpening of factory products. Some specimens, such as DUM 15 (H.M.), seem to imitate metal flat axes in the thinness of the head and the width of the cutting edge. Four of the implements which we have sectioned are of this type.

DUM 4 (H.M.), from Middlebie, Dumfriesshire. Length 4·8 in., breadth 2·8 in., of a fine-grained, pale grey stone, bearing clear grinding marks. Section: Typical Group VI.

DUM 15 (H.M.), from Cowhill, Holywood, Dumfriesshire. Length 7·3 in., breadth 7·3 in., of a fine-grained, pale grey stone. Section: Typical Group VI.

KIR 1 (H.M.), from Maryland, Troqueer, Kirkcudbrightshire. Length 5·1 in., breadth 2·4 in., of a fine-grained, pale grey stone. Section: Typical Group VI.

KIR 2 (H.M.), from East Preston Farm, Kirkbean, Kirkcudbrightshire. Length 4·0 in., breadth 2·3 in., of a greenish-grey stone showing pronounced bandings. Section: Typical Group VI.

### 4. Partly Ground Stone Implements (fig. 3):

Although many of the Group VI axes in Scotland and elsewhere bear traces of the original rough flaking, in the form of partly obliterated flake-scars, no examples are known where the axe has been ground only at its cutting edge. One of the implements which we have examined shows extensive flake-scars which have been partly smoothed by grinding over much of both faces; the flake-scars, however, are still clear and sharp at what was obviously meant to be the cutting edge, so this is fairly obviously an unfinished axe. It is interesting to note the systematic way in which the task was undertaken, the faces being smoothed before the edge was sharpened. This contrasts markedly with the practice in Northern Europe, occasionally found elsewhere, whereby the cutting edge alone of the axe was ground, the rest being left in its roughly flaked state.

DUM 16 (H.M.), from Lands Farm, Birrens, Lockerbie, Dumfriesshire. Length 8·7 in., breadth 3·5 in., of a fine-grained, medium grey stone, showing much more darkly in fracture. Section: Typical Group VI.

### 5. Ground Stone Implements with Secondary Flaking (fig. 3):

These implements have apparently been ground over all or most of their surface

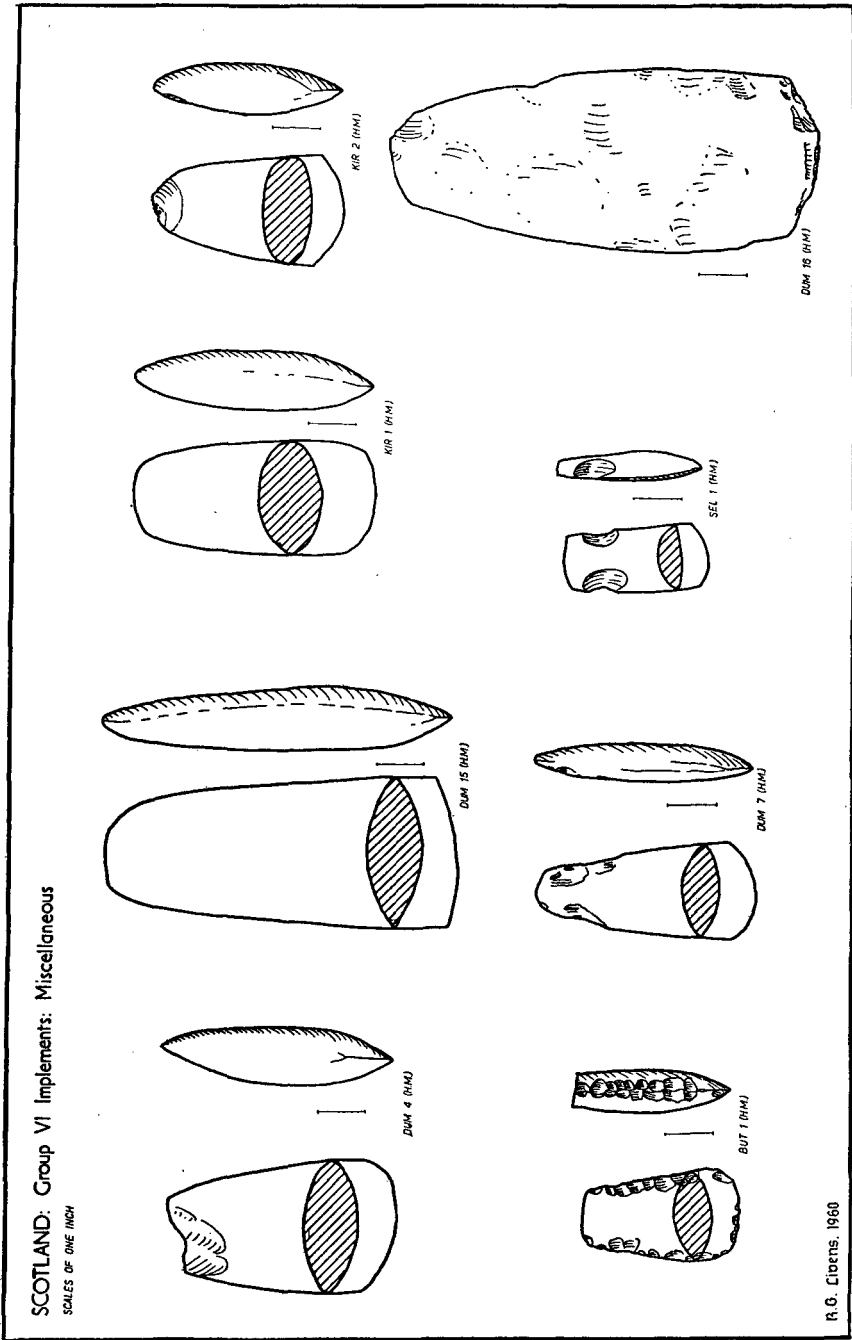


FIG. 3

and have been subsequently retouched by flaking, possibly to enable them to be fitted into a sleeve of antler or for re-use as a different type of implement. The adze SEL 1 (H.M.) is of particular interest, for it was originally a small adze of shoe-last type and has been re-used as a type of implement which is apparently peculiar to the Tweed valley. Among the finds from this area are large numbers of flat, oval stone pebbles which have had both sides crudely flaked to make a rough 'waist'. The object of this 'waist' was presumably to enable the stone to be used as some sort of weight for a line or net. The implement in question has had large flakes removed to give it a pronounced 'waist' about 1 in. below the butt-end. Two other implements which we have sectioned fall into this category; one has been flaked along both sides (BUT 1 (H.M.)), presumably to enable the axe to be fitted into a bone or antler sleeve and, in the other case (DUM 7 (H.M.)), the axe has been flaked at the butt-end, possibly with a similar purpose in view.

BUT 1 (H.M.), from Giants Graves, Whiting Bay, Isle of Arran. Length 3.2 in., breadth 1.9 in., of a fine-grained, cement-grey stone. Section: Typical Group VI.

DUM 7 (H.M.), from Tynron, Dumfriesshire. Length 4.5 in., breadth 2.1 in., of a fine-grained, light grey stone. Section: Typical Group VI (Coarse).

SEL 1 (H.M.), from Ashybank, Selkirkshire. Length 3.0 in., breadth 1.4 in., of a fine-grained, pale grey stone, showing a slightly banded structure. Section: Typical Group VI.

*Implements possible of Group VI*  
(fig. 4)

Four of the axes which we have examined show, in section, some affinities with the Group VI rock, but on present evidence, we are unable to commit ourselves to a certain attribution. Three of the axes (DUM 1 (H.M.), DUM 13 (H.M.) and STI 2 (H.M.)) show close affinities to each other and one of these (DUM 13 (H.M.)) should on typological grounds belong to Group VI.

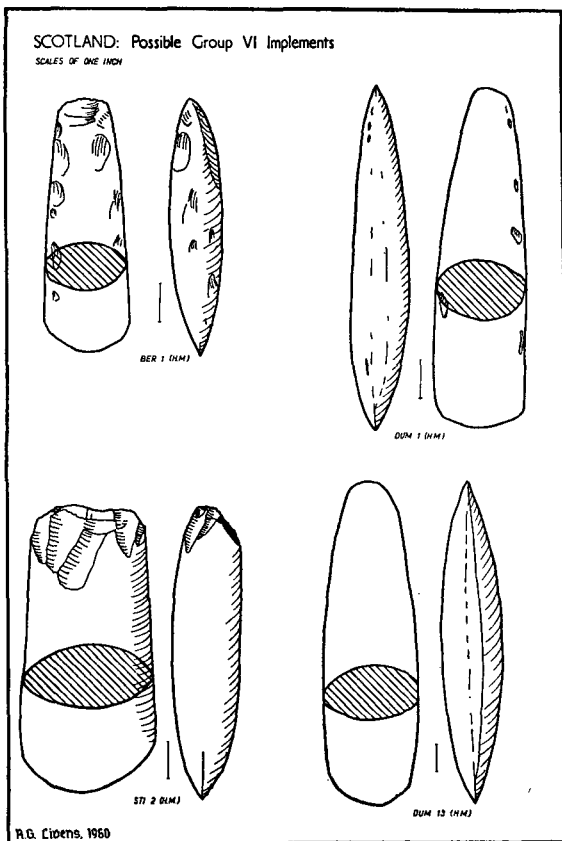


FIG. 4



- BER 1 (H.M.), from Preston, Berwickshire. Length 6.1 in., breadth 2.3 in., of a fine-grained, pale grey stone. Section: A Felsite; dubiously Group VI.
- DUM 1 (H.M.), from Johnstone, Dumfriesshire. Length 8.9 in., breadth 2.4 in., of a fine-grained grey stone. Section: Felspar Tuff, fragmental; dubiously Group VI but comparable to DUM 13 (H.M.) and STI 2 (H.M.).
- DUM 13 (H.M.), from Bellhill Farm, Cowhill, Holywood, Dumfriesshire. Length 12.6 in., breadth 2.5 in., of a fine-grained, light grey stone. The faceted sides of this axe, together with its great length, should relate it to other implements which are petrologically of Group VI. Section: cf. DUM 1 (H.M.).
- STI 2 (H.M.), from Denny, Stirlingshire. Length 7.4 in., breadth 3.5 in., of a fine-grained, medium grey stone. Section: A very Fine-Grained Andesite Tuff; cf. DUM 1 (H.M.).

#### GROUP IX (fig. 5)

The only other group represented among the axes which we have examined is Group IX. This material is known to have been exploited in two principal localities: the outcrops on Tievebullagh Hill, Co. Antrim,<sup>1</sup> and Rathlin Island<sup>2</sup> and, in view

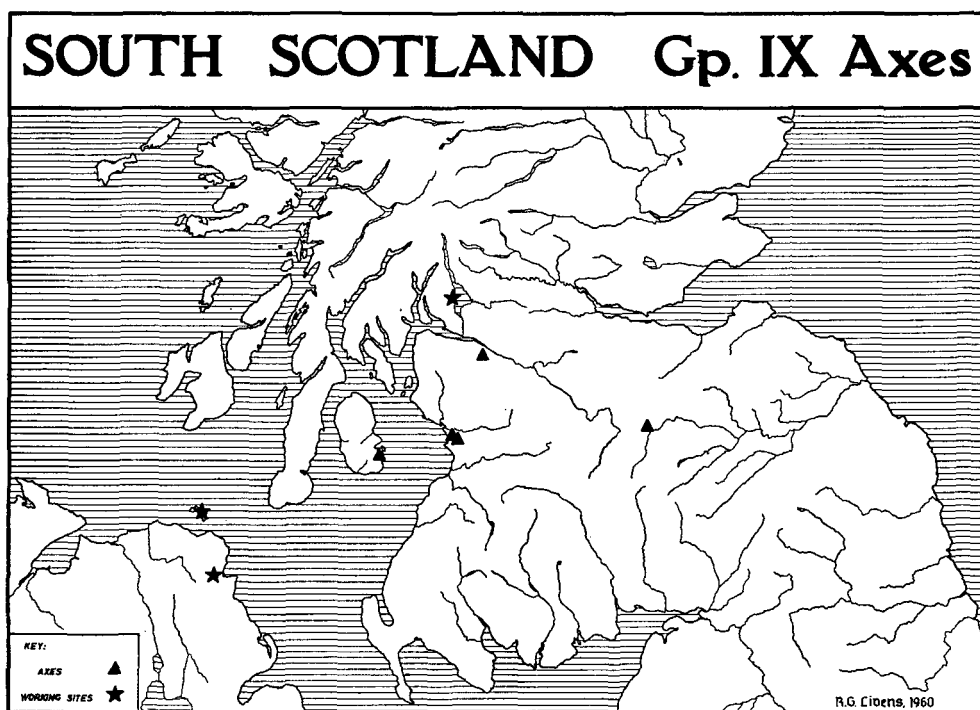


FIG. 5

<sup>1</sup> Knowles, W. J., *op. cit.*

<sup>2</sup> Movius, H. L., *The Irish Stone Age* (C.U.P., 1942), 228.

of the contacts between Scotland and Ireland reflected in the distribution of Clyde-Carlingford tombs in both countries, it is to be expected that axes of Irish origin could have made their way to Scotland. Mr Jope<sup>1</sup> has plotted the distribution of these axes, which is rather curious: four finds from north-east Scotland, three from Renfrewshire, one from Dunbartonshire and one from the Central Lowlands of Scotland. Our three possible examples added to these bring the total from the upper Firth of Clyde area to seven. The association of the Giants Graves axe, BUT 6 (H.M.) already mentioned, is not certain.

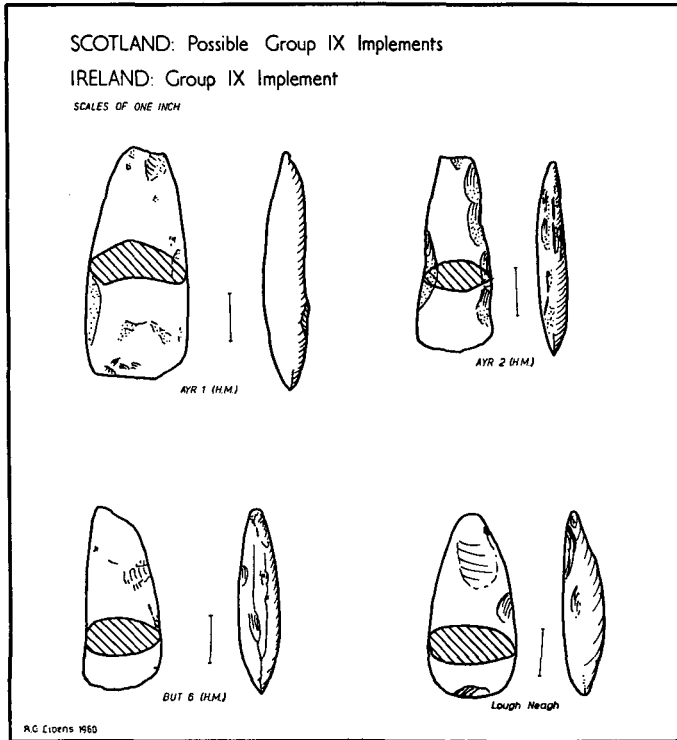


FIG. 6

The apparently complementary distributions of axes of Groups VI and IX in the Clyde area has already been mentioned (p. 59) and we can only repeat our warning that the picture is far from complete. None of the implements has occurred in a well-authenticated context; the possible associations of BUT 6 (H.M.) are noted, while the two Ayrshire axes, AYR 1 (H.M.) and AYR 2 (H.M.) come from Shewalton Moor, an extensive sand-dune site, which has yielded traces of occupation including (*inter alia*) leaf-arrowheads and Rinyo-Clacton pottery.<sup>2</sup> A further point of note in this connection is the occurrence of Neolithic pottery of Lyles Hill affinities

<sup>1</sup> Jope, E. M., 'Porcellanite Axes from Factories in North-East Ireland: Tievebulliagh and Rathlin', *Ulster J.A.*, xv, 31-60.

<sup>2</sup> Smith, J., *Prehistoric Man in Ayrshire* (London, 1895), 107-18.

at Bishopton<sup>1</sup> and the further emphasis which it gives to Scottish-Irish contacts.

The find from Luss (Dunbartonshire) has already been mentioned (p. 65); the precise nature of the find or of the site is not clear, but the presence of flakes<sup>2</sup> suggests the possibility of a working site and it has accordingly been recorded as such on the map. The axe from Lough Neagh was sectioned to give us a type-section of the rock; the record card has been deposited with Mr Jope and given an Ulster serial number; it is only included in our list for the sake of completeness.

All the implements sectioned have been unperforated axes, usually of rather slack outline; none of them shows any of the features which distinguish the Group VI implements already listed (fig. 6).

AYR 1 (H.M.), from Shewalton Moor, Dundonald, Ayrshire. Length 4.7 in., breadth 2.1 in., of a dark grey stone with light flecks. Section: A Highly Altered Lava; possibly Group IX.

AYR 2 (H.M.), from Shewalton Moor, Dundonald, Ayrshire. Length 4.1 in., breadth 3.6 in., of a dark grey stone with light flecks. Section: A Fine-Grained Altered Tuff, possibly Group IX.

BUT 6 (H.M.), from Giants Graves, Whiting Bay, Isle of Arran. Length 3.8 in., breadth 1.6 in., of a fine-grained brown stone with blue flecks. Section: possibly Group IX.

U 6, from Lough Neagh, Northern Ireland. Length 3.7 in., breadth 1.9 in., of a dark grey stone with light flecks. Section: Fine-Grained Altered Tuff, possibly Group IX.

#### IMPLEMENTS WHICH DO NOT FALL INTO ESTABLISHED GROUPS (fig. 7)

A variety of the implements examined do not fall into any of the established groups and are presumed to be of local origin. Three implements, however, may be an exception to this rule: one axe (DUM 8 (H.M.)) is possibly of Group XIII (Preselite), while two others (ARG 1 (H.M.)) and BUT 5 (H.M.) show striking similarities to each other.

DUM 8 (H.M.), from Watcarrick, Eskdalemuir, Dumfriesshire. Length 6.7 in., breadth 2.9 in., of a coarse-grained, cream-coloured stone, flecked with a greyish black. Section: This differs superficially from the type-section of Group XIII, in that hornblende in the former almost completely replaces the augite of the latter, the textures, however, are closely similar. A few relics of unaltered augite remain as cores in the DUM 8 (H.M.) hornblende and it seems likely that this section represents a local variant of a common parent intrusive of which the Group XIII Preselite is the normal type.

The two axes, ARG 1 (H.M.) and BUT 5 (H.M.), are of a rock-type similar to those found in the numerous basaltic and doleritic dykes which cross Arran and Kintyre. The sections are not sufficiently distinctive to enable a certain attribution to be made and both may have been made in the localities where they were found.

<sup>1</sup> Piggott, S., *Discovery and Excavation, Scotland, 1957* (Scottish Regional Group, C.B.A.), 25-26.

<sup>2</sup> Lacaille, A. D., 'Aspects of Intentional Fracture', *T. Glasgow A.S.*, N.S., ix, 313-41.

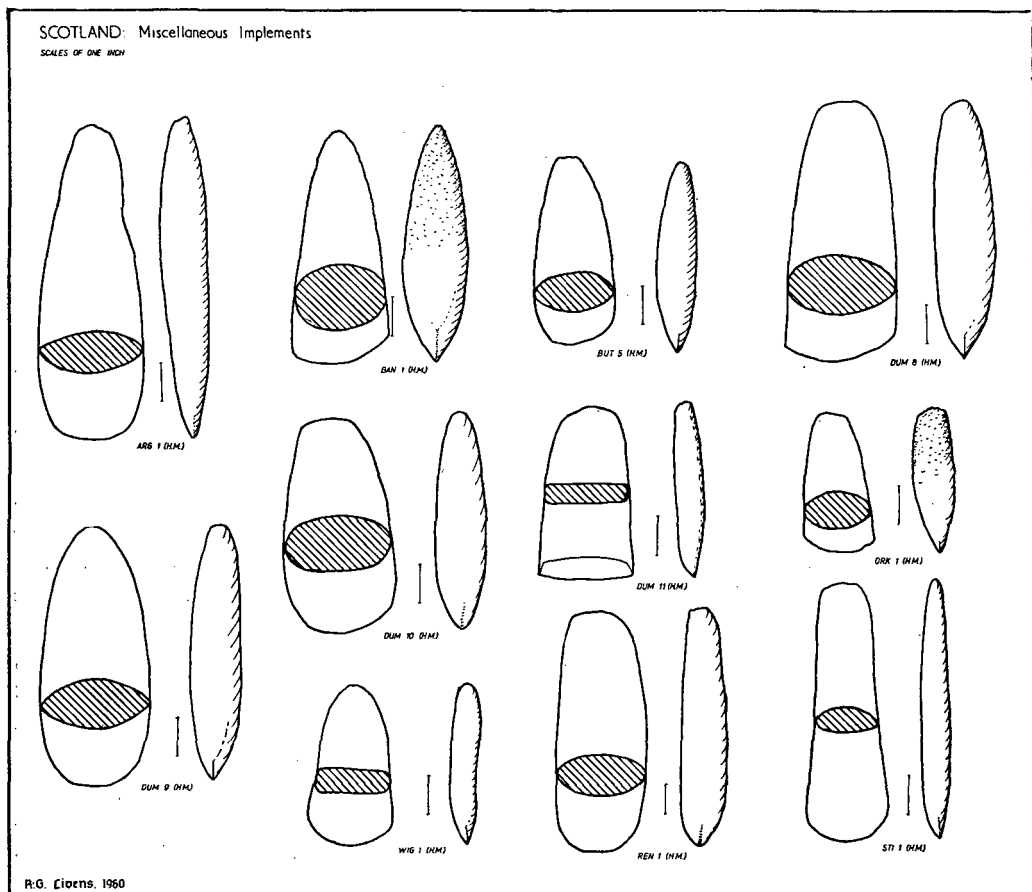


FIG. 7

ARG 1 (H.M.), from Kilmartin, Argyll. Length 8.2 in., breadth 2.8 in., of a fine-grained, blackish stone, patinated to a light yellowish grey. This implement has been used as a whetstone and is consequently much defaced. Section: A nonporphyritic basalt with texture dominated by a mesh of platy plagioclases in random orientation. Magnetite is also surprisingly prominent as quasi-idiomorphic crystal-grains disseminated in the rocks. Augite of a faint buff colour has a granular habit, showing patches in which the augite has a tendency to an ophitic relation to the plagioclase plates. Olivine is also abundant and has a granular habit; it is somewhat altered to serpentine. A small amount of chloritic material appears sporadically in the interstices of the crystal mesh: hence the texture, while dominantly granular, shows some patches of an intersertal, or even of a crudely ophitic texture. A single quartz xenocryst is of little significance in this context. This section is closely akin to that of BUT 5 (H.M.).

BUT 5 (H.M.), from Giants Graves, Whiting Bay, Isle of Arran. Length 4.9 in., breadth 2.2 in., of a rusty brown stone, weathered to a pitted surface. Section: Closely akin to that of ARG 1 (H.M.).

The remainder of the axes which we have examined are made of a variety of igneous rocks, all of which are presumably of local origin.

BAN 1 (H.M.), from Newmill, Banffshire. Length 8.0 in., breadth 2.5 in., of a brownish-grey stone. Section: A Fine-Grained Schistose Grit, presumably Highland.

DUM 9 (H.M.), from Newfield, Ecclefechan, Dumfriesshire. Length 6.7 in., breadth 2.9 in., of a medium-grained, brownish-grey stone. Section: A Medium-Grained Felspathic Grit or Greywacke. Quartz in angular grains is the dominant constituent, but feldspars (mainly an acid plagioclase but with rarer orthoclase micropertthite and occasional microcline) are frequent, while some raggy sericite and pale brown biotite are also present. Composite fragments include an association of micropertthite and acid plagioclase, as well as fine-grained metamorphic quartzite and a flake of a ferruginous siltstone. The rock might easily be matched among the greywackes of the Southern Uplands, or among the less metamorphosed schistose grits of the Highland Border.

DUM 10 (H.M.), from Tinwald, Dumfriesshire. Length 5.5 in., breadth 2.9 in., of a fine-grained, blue-grey stone, with bandings of sandy brown. Section: A Normal Quartz Dolerite, such as forms the numerous east-west dykes and associated sills of late Carboniferous age in the Midland Valley and adjacent parts of Scotland. The section shows a reticulation mesh of badly altered intermediate plagioclase, roughly prismatic but fresh augite (large 2V) and occasional better-formed stumpy prisms of a pigeonite (rather small 2V). Quartz is prominent interstitially.

DUM 11 (H.M.), from Dunreggan Brae, Moniaive, Dumfriesshire. Length 4.5 in., breadth 2.5 in., of a fine-grained dark green-grey stone with pale green veinings. The type of this implement (a rectangular-sectioned adze) suggests an origin in the South Pacific area. Section: An indeterminate greywacke.

STI 1 (H.M.), from Kilsyth, Stirlingshire. Length 6.7 in., breadth 2.1 in., of a medium-grained, brownish stone. Section: A Tholeiitic Basalt with Andesitic affinities, of Old Red Sandstone Age.

ORK 1 (H.M.), from Orphir, Orkney. Length 3.6 in., breadth 1.8 in., Section: Hornblende (with augite cores) and albitised plagepidiorite.

REN 1 (H.M.), from Kilmacolm, Renfrewshire. Length 6.3 in., breadth 2.4 in., of a fine-grained, medium-grey stone. Section: A Micaceous Greywacke, not Group XV.

WIG 1 (H.M.), from Whithorn, Wigtownshire. Length 4.2 in., breadth 2.2 in., of a fine-grained, medium grey-brown stone. Section: A Micaceous Greywacke, not Group XV.

This survey is, of course, far from complete; the great majority of Scottish axes have yet to be sectioned, but we hope that our work may give future workers, particularly those interested in the archaeology of south-west Scotland, a foundation on which to build.

## APPENDIX

### THE NUMBERING OF AXES

The numbering of the axes sectioned conforms with the system established by the Council for British Archaeology, whereby each axe receives a serial number within the county in which it was found. The number is denoted by the first three letters of the county name, followed by the serial number. In order to avoid confusion with the numbering systems adopted by other independent workers in Scotland, the letters 'H.M.' have been appended to the serial number, when the axe has been examined by Glasgow University. All the sections of the axes so examined are preserved in the Hunterian Museum for reference purposes, together with photostat copies of the C.B.A. Record Cards.

TOPOGRAPHICAL LIST OF AXES SECTIONED

<i>No.</i>	<i>County</i>	<i>Parish</i>	<i>Site</i>	<i>Map ref.</i>	<i>Group</i>	<i>Present location</i>
ARG 1 (H.M.)	Argyllshire	Kilmartin	—	—	cf. BUT 5 (H.M.)	In possession of Miss M. Campbell, Kilberry
AYR 1 (H.M.)	Ayrshire	Dundonald	Shewalton	26/3336	IX?	Hunterian Museum B.1914.130
AYR 2 (H.M.)	Ayrshire	Dundonald	Shewalton	26/3336	IX?	Hunterian Museum B.1914.131
BAN 1 (H.M.)	Banffshire	New Mill	—	—	—	Hunterian Museum B.1914.132
BER 1 (H.M.)	Berwickshire	Preston	—	—	VI?	Hunterian Museum B.1914.135
BER 2 (H.M.)	Berwickshire	Cornhill-on-Tweed	—	—	VI	Hunterian Museum B.1914.134
BUT 1 (H.M.)	Bute	Whiting Bay	Giants Graves	—	VI	Hunterian Museum A.1942.3
BUT 2 (H.M.)	Bute	Whiting Bay	Giants Graves	—	VI	Hunterian Museum A.1942.4
BUT 3 (H.M.)	Bute	Whiting Bay	Giants Graves	—	VI	Hunterian Museum A.1942.6
BUT 4 (H.M.)	Bute	Whiting Bay	Giants Graves	—	VI	Hunterian Museum A.1942.7
BUT 5 (H.M.)	Bute	Whiting Bay	Giants Graves	—	cf. ARG 1 (H.M.)	Hunterian Museum A.1942.5
BUT 6 (H.M.)	Bute	Whiting Bay	Giants Graves	—	IX?	Hunterian Museum A.1942.8
DUM 1 (H.M.)	Dumfriesshire	Johnstone	—	XXXIII NE	cf. STI 2 (H.M.)	Hunterian Museum B.1914.150
DUM 2 (H.M.)	Dumfriesshire	Annan	—	—	VI	Dumfries Museum 24/SA/782
DUM 3 (H.M.)	Dumfriesshire	Dumfries	Maidenbower Crags	—	VI	Dumfries Museum 4/SA/11
DUM 4 (H.M.)	Dumfriesshire	Middlebie	—	—	VI	Dumfries Museum 21/SA/591
DUM 5 (H.M.)	Dumfriesshire	Dumfries	Kelton Mains	—	VI	Dumfries Museum 8/SA/27
DUM 6 (H.M.)	Dumfriesshire	Durrisdeer	—	—	VI	Dumfries Museum 6/SA/571
DUM 7 (H.M.)	Dumfriesshire	Tynron	—	—	VI	Dumfries Museum 22/SA/618
DUM 8 (H.M.)	Dumfriesshire	Eskdalemuir	Watcarrick	—	XIII?	Dumfries Museum 23/SA/735
DUM 9 (H.M.)	Dumfriesshire	Ecclefechan	Newfield	—	?	Dumfries Museum 2/SA/6
DUM 10 (H.M.)	Dumfriesshire	Tinwald	—	—	?	Dumfries Museum 7/SA/26
DUM 11 (H.M.)	Dumfriesshire	Moniaive	Dunreggan Brae	—	?	Dumfries Museum 14/SA/430
DUM 12 (H.M.)	Dumfriesshire	Closeburn	—	—	VI	Dumfries Museum 15/SA
DUM 13 (H.M.)	Dumfriesshire	Cowhill	Bellhill Farm	—	cf. STI 2 (H.M.)	Dumfries Museum 12/SA
DUM 14 (H.M.)	Dumfriesshire	East Tinwald	—	—	VI	Dumfries Museum 16/SA
DUM 15 (H.M.)	Dumfriesshire	Cowhill	Hollywood	—	VI	Dumfries Museum 11/SA
DUM 16 (H.M.)	Dumfriesshire	Lockerbie	Lands Farm	—	VI	Dumfries Museum 19/SA
KIR 1 (H.M.)	Kirkcudbrightshire	Troqueer	Maryland	—	VI	Dumfries Museum 10/SA/29
KIR 2 (H.M.)	Kirkcudbrightshire	Kirkbean	East Preston	—	VI	Dumfries Museum 5
ORK 1 (H.M.)	Orkney	Orphir	—	—	?	Hunterian Museum B.1914.609
REN 1 (H.M.)	Renfrewshire	Kilmacolm	Auchenfoil	—	?	In private hands at Auchenfoil
SEL 1 (H.M.)	Selkirkshire	Ashybank	—	—	VI	Hunterian Museum B.1914.184
STI 1 (H.M.)	Stirlingshire	Kilsyth	—	26/716788	?	Colzium House Museum, Kilsyth
STI 2 (H.M.)	Stirlingshire	Denny	—	XXIII SE	cf. DUM 1 (H.M.) & DUM 13 (H.M.)	Hunterian Museum A.40
WIG 1 (H.M.)	Wigtownshire	Whithorn	—	—	?	Dumfries Museum 18/SA
WIG 2 (H.M.)	Wigtownshire	Stoneykirk	Kirklauchline	—	VI	Dumfries Museum 18/SA
U	Co. Down	Lough Neagh	—	—	IX?	Hunterian Museum B.1914.208